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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,308	03/30/2004	Dietrich Pantke	CH-8087/STA-217	3620

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BAYER MATERIAL SCIENCE LLC  
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PITTSBURGH, PA 15205

EXAMINER
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KEMMERLE III, RUSSELL J

ART UNIT	PAPER NUMBER
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1731

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/19/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/813,308

Applicant(s)

PANTKE ET AL.

Examiner

Russell J. Kemmerle III

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 13-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 8/12/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Election/Restrictions***

Applicant's election with traverse of Group I, Claims 1-12, drawn to a process in the reply filed on 11 December 2006 is acknowledged. The traversal is on the ground(s) that all claims as originally filed (1-21) would be part of an overlapping search area. This is not found persuasive because while there may be some overlap in the search areas of the process and product, each group would also involve significant searching in areas that would not overlap with the other group. The process claims of elected Group I (claims 1-12) would involve a search of areas covering the steps recited in claim 1, regardless of what the final product made is. Similarly, the search for product claims of unelected Group II (claims 13-21) would involve a search of silicatic solid molds meeting the description of those claims, regardless of how they were made (by the process of Group I or by any other process).

This is also true of the product claims 13, 15, 16 and 18-21 which are of the product by process type. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different

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process.” In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted) (Claim was directed to a novolac color developer. The process of making the developer was allowed. The difference between the inventive process and the prior art was the addition of metal oxide and carboxylic acid as separate ingredients instead of adding the more expensive pre-reacted metal carboxylate. The product-by-process claim was rejected because the end product, in both the prior art and the allowed process, ends up containing metal carboxylate. The fact that the metal carboxylate is not directly added, but is instead produced in-situ does not change the end product.)

The requirement is still deemed proper and is therefore made FINAL.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 2-6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 2-6 are all rejected because the word “modulus” was not described in the specification in such a way as to enable one of ordinary skill in the art to practice the invention.

Specifically, on page 4 lines 13-15 of the disclosure it is stated that a "modulus in a silicatic binder to be the analytically determinable Molar ratio of silicon dioxide ( $\text{SiO}_2$ ) and alkali metal oxide  $\text{M}_2\text{O}$  ( $\text{M}$  = lithium, sodium or potassium) within the solid of the binder." However, such a definition is not compatible with examples given in the disclosure.

For example, example 1 listed on page 13 of the disclosure is said to be a solution containing a silicatic binder with a modulus of 6 and a solids weight content of 30%. The solution is made by mixing:

- 56.1 g of potassium waterglass (described as potassium waterglass 35 by Cognis Deutschland, meaning 35% by weight potassium waterglass and 65% by weight water, potassium waterglass having the chemical formula  $\text{K}_2\text{SiO}_3$  and a molecular weight of 0.127 g/mol),
- 19.9 g of 50% strength silica sol (meaning 50% by weight water and 50% by weight  $\text{SiO}_2$  having a molecular weight of 60.1 g/mol),
- and 22.4 g of deionized water.

Following is the calculation of such a mixture to determine the molar ratio of  $\text{SiO}_2$  to  $\text{K}_2\text{O}$  (i.e., the modulus) for such a binder solution:

- Weight of potassium waterglass =  $56.1 \text{ g} \times 0.35 = 19.635 \text{ g}$  (the other 36.465 g of the 56.1 g of waterglass being water)
- Moles of potassium waterglass =  $19.635 \text{ g} \times (1 \text{ mol}/154.296 \text{ g}) = 0.127$  moles of potassium waterglass (which would be equal to 0.127 moles of  $\text{K}_2\text{O}$  and 0.127 moles of  $\text{SiO}_2$ )

- Weight of silica from the silica sol =  $19.9 \text{ g} \times 0.5 = 9.95 \text{ g}$  (the other 9.95 g of sol being water)
- Moles of  $\text{SiO}_2 = 9.95 \text{ g} \times (1 \text{ mole}/60.1 \text{ g}) = 0.166 \text{ moles}$
- Total moles of  $\text{K}_2\text{O} = 0.127 \text{ moles}$  (from the potassium waterglass)
- Total moles of  $\text{SiO}_2 = 0.127 \text{ moles} + 0.166 \text{ moles} = 0.293 \text{ moles}$  (from the potassium waterglass and the silica sol)
- Molar ratio of  $\text{SiO}_2$  to  $\text{K}_2\text{O}$  (modulus) =  $0.293 \text{ moles} / 0.127 \text{ moles} = 2.31$

Since the modulus of this solution is apparently so far from the 6 that is said it should be, one of ordinary skill in the art would not be able to practice the claimed invention, since they would not understand how the modulus of the binder solution is determined.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 9-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Horch (DE 19542069 English abstract).

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Horch discloses a method of creating a non-combustible part by creating a mixture of silica and waterglass (which acts as a silicatic binder), pressing the mixture to create a molded piece, drying the piece, then dipping the dried piece in a water-proofing agent solution (waterglass is an example of a known silicatic binder which also acts as a waterproofing agent, see Berg, US Patent 5,194,087, abstract).

Referring to claims 10-12, Horch discloses that the silicatic solid used is vermiculite (which is a specific example of the broader class of phyllosilicates).

Thus, Horch discloses, or reasonably suggests, every limitation of claims 1 and 9-12, and thus anticipates the claims.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horch in view of Reinhardt (US Patent 5,807,781).

Horch is relied upon as discussed above, but in the English abstract does not disclose the silicatic binder solution (either the first or the second) having a solids content between 5% and 60%.

Reinhardt discloses that waterglass (as discussed as the first and second binder of Horch) is often used as a binder and is commercially available with a solids content of 30% to 50% by weight (Col2 lines 42-53).

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It would have been obvious as to one of ordinary skill in the art, at the time of invention by applicant, to have combined the method of creating a silicate molding taught by Horch with that disclosed Reinhardt of using a waterglass binder solution having a solids content of 30% to 50% since Reinhardt discloses that those are commercially available as a binder.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russell J. Kemmerle III whose telephone number is 571-272-6509. The examiner can normally be reached on Monday through Friday, 8:30-4:00 EST.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RK

  
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for AU 1731